

## SEQUENCE LISTING

<110> KRINGLE PHARMA CO., LTD.

<110> Nakamura, Toshikazu

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<120> Prophylactic and therapeutic agents for asthma

<130> K12F1248

10 <160> 6

<210> 1

<211> 728

<212> PRT

15 <213> Homo sapiens

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Arg Lys Arg Arg Asn Thr Ile His Glu Phe Lys Lys Ser Ala Lys Thr

35 40 45

Thr Leu Ile Lys Ile Asp Pro Ala Leu Lys Ile Lys Thr Lys Lys Val

25 50 55 60

Asn Thr Ala Asp Gln Cys Ala Asn Arg Cys Thr rg Asn Lys Gly Leu

65                    70                    75                    80  
Pro Phe Thr Cys Lys Ala Phe Val Phe Asp Lys Ala Arg Lys Gln Cys  
                      85                    90                    95  
Leu Trp Phe Pro Phe Asn Ser Met Ser Ser Gly Val Lys Lys Glu Phe  
5                    100                    105                    110  
Gly His Glu Phe Asp Leu Tyr Glu Asn Lys Asp Tyr Ile Arg Asn Cys  
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Ile Ile Gly Lys Gly Arg Ser Tyr Lys Gly Thr Val Ser Ile Thr Lys  
                      130                    135                    140  
10 Ser Gly Ile Lys Cys Gln Pro Trp Ser Ser Met Ile Pro His Glu His  
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Ser Phe Leu Pro Ser Ser Tyr Arg Gly Lys Asp Leu Gln Glu Asn Tyr  
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Cys Arg Asn Pro Arg Gly Glu Glu Gly Gly Pro Trp Cys Phe Thr Ser  
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Asn Pro Glu Val Arg Tyr Glu Val Cys Asp Ile Pro Gln Cys Ser Glu  
                      195                    200                    205  
Val Glu Cys Met Thr Cys Asn Gly Glu Ser Tyr Arg Gly Leu Met Asp  
                      210                    215                    220  
20 His Thr Glu Ser Gly Lys Ile Cys Gln Arg Trp Asp His Gln Thr Pro  
                      225                    230                    235                    240  
His Arg His Lys Phe Leu Pro Glu Arg Tyr Pro Asp Lys Gly Phe Asp  
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Asp Asn Tyr Cys Arg Asn Pro Asp Gly Gln Pro Arg Pro Trp Cys Tyr  
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Thr Leu Asp Pro His Thr Arg Trp Glu Tyr Cys Ala Ile Lys Thr Cys

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	Cys Ile Gln Gly Gln Gly Glu Gly Tyr Arg Gly Thr Val Asn Thr Ile		
5 305	310	315	320
	Trp Asn Gly Ile Pro Cys Gln Arg Trp Asp Ser Gln Tyr Pro His Glu		
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	His Asp Met Thr Pro Glu Asn Phe Lys Cys Lys Asp Leu Arg Glu Asn		
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	Asp Pro Asn Ile Arg Val Gly Tyr Cys Ser Gln Ile Pro Asn Cys Asp		
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	Met Ser His Gly Gln Asp Cys Tyr Arg Gly Asn Gly Lys Asn Tyr Met		
15 385	390	395	400
	Gly Asn Leu Ser Gln Thr Arg Ser Gly Leu Thr Cys Ser Met Trp Asp		
	405	410	415
	Lys Asn Met Glu Asp Leu His Arg His Ile Phe Trp Glu Pro Asp Ala		
	420	425	430
20	Ser Lys Leu Asn Glu Asn Tyr Cys Arg Asn Pro Asp Asp Ala His		
	435	440	445
	Gly Pro Trp Cys Tyr Thr Gly Asn Pro Leu Ile Pro Trp Asp Tyr Cys		
	450	455	460
	Pro Ile Ser Arg Cys Glu Gly Asp Thr Thr Pro Thr Ile Val Asn Leu		
25 465	470	475	480
	Asp His Pro Val Ile Ser Cys Ala Lys Thr Lys Gln Leu Arg Val Val		

	485	490	495
	Asn Gly Ile Pro Thr Arg Thr Asn Ile Gly Trp Met Val Ser Leu Arg		
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	Tyr Arg Asn Lys His Ile Cys Gly Gly Ser Leu Ile Lys Glu Ser Trp		
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	Val Leu Thr Ala Arg Gln Cys Phe Pro Ser Arg Asp Leu Lys Asp Tyr		
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	Glu Ala Trp Leu Gly Ile His Asp Val His Gly Arg Gly Asp Glu Lys		
	545	550	555
10	560	565	570
	Cys Lys Gln Val Leu Asn Val Ser Gln Leu Val Tyr Gly Pro Glu Gly		
	575	580	585
	Ser Asp Leu Val Leu Met Lys Leu Ala Arg Pro Ala Val Leu Asp Asp		
	590	595	600
	Phe Val Ser Thr Ile Asp Leu Pro Asn Tyr Gly Cys Thr Ile Pro Glu		
15	605	610	615
	Lys Thr Ser Cys Ser Val Tyr Gly Trp Gly Tyr Thr Gly Leu Ile Asn		
	620	625	630
	Tyr Asp Gly Leu Leu Arg Val Ala His Leu Tyr Ile Met Gly Asn Glu		
	640	645	650
20	655	660	665
	Lys Cys Ser Gln His His Arg Gly Lys Val Thr Leu Asn Glu Ser Glu		
	670	675	685
	Ile Cys Ala Gly Ala Glu Lys Ile Gly Ser Gly Pro Cys Glu Gly Asp		
	Tyr Gly Gly Pro Leu Val Cys Glu Gln His Lys Met Arg Met Val Leu		
25	Gly Val Ile Val Pro Gly Arg Gly Cys Ala Ile Pro Asn Arg Pro Gly		

690                    695                    700  
Ile Phe Val Arg Val Ala Tyr Tyr Ala Lys Trp Ile His Lys Ile Ile  
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Leu Thr Tyr Lys Val Pro Gln Ser  
5                      725

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<212> PRT  
10 <213> Homo sapiens

<400> 2  
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20                    25                    30  
Arg Lys Arg Arg Asn Thr Ile His Glu Phe Lys Lys Ser Ala Lys Thr  
35                    40                    45  
Thr Leu Ile Lys Ile Asp Pro Ala Leu Lys Ile Lys Thr Lys Lys Val  
20                    50                    55                    60  
Asn Thr Ala Asp Gln Cys Ala Asn Arg Cys Thr Arg Asn Lys Gly Leu  
65                    70                    75                    95  
Pro Phe Thr Cys Lys Ala Phe Val Phe Asp Lys Ala Arg Lys Gln Cys  
80                    85                    90  
25 Leu Trp Phe Pro Phe Asn Ser Met Ser Ser Gly Val Lys Lys Glu Phe  
100                    105                    110

Gly His Glu Phe Asp Leu Tyr Glu Asn Lys Asp Tyr Ile Arg Asn Cys  
115 120 125

Ile Ile Gly Lys Gly Arg Ser Tyr Lys Gly Thr Val Ser Ile Thr Lys  
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5 Ser Gly Ile Lys Cys Gln Pro Trp Ser Ser Met Ile Pro His Glu His  
145 150 155 160

Ser Tyr Arg Gly Lys Asp Leu Gln Glu Asn Tyr Cys Arg Asn Pro Arg  
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Gly Glu Glu Gly Gly Pro Trp Cys Phe Thr Ser Asn Pro Glu Val Arg  
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Tyr Glu Val Cys Asp Ile Pro Gln Cys Ser Glu Val Glu Cys Met Thr  
195 200 205

Cys Asn Gly Glu Ser Tyr Arg Gly Leu Met Asp His Thr Glu Ser Gly  
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15 Lys Ile Cys Gln Arg Trp Asp His Gln Thr Pro His Arg His Lys Phe  
225 230 235 240

Leu Pro Glu Arg Tyr Pro Asp Lys Gly Phe Asp Asp Asn Tyr Cys Arg  
245 250 255

Asn Pro Asp Gly Gln Pro Arg Pro Trp Cys Tyr Thr Leu Asp Pro His  
20 260 265 270

Thr Arg Trp Glu Tyr Cys Ala Ile Lys Thr Cys Ala Asp Asn Thr Met  
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Asn Asp Thr Asp Val Pro Leu Glu Thr Thr Glu Cys Ile Gln Gly Gln  
290 295 300

25 Gly Glu Gly Tyr Arg Gly Thr Val Asn Thr Ile Trp Asn Gly Ile Pro  
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Cys Gln Arg Trp Asp Ser Gln Tyr Pro His Glu His Asp Met Thr Pro  
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Glu Asn Phe Lys Cys Lys Asp Leu Arg Glu Asn Tyr Cys Arg Asn Pro  
340 345 350

5 Asp Gly Ser Glu Ser Pro Trp Cys Phe Thr Thr Asp Pro Asn Ile Arg  
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Val Gly Tyr Cys Ser Gln Ile Pro Asn Cys Asp Met Ser His Gly Gln  
370 375 380

Asp Cys Tyr Arg Gly Asn Gly Lys Asn Tyr Met Gly Asn Leu Ser Gln  
10 385 390 395 400

Thr Arg Ser Gly Leu Thr Cys Ser Met Trp Asp Lys Asn Met Glu Asp  
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Leu His Arg His Ile Phe Trp Glu Pro Asp Ala Ser Lys Leu Asn Glu  
420 425 430

15 Asn Tyr Cys Arg Asn Pro Asp Asp Ala His Gly Pro Trp Cys Tyr  
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Thr Gly Asn Pro Leu Ile Pro Trp Asp Tyr Cys Pro Ile Ser Arg Cys  
450 455 460

Glu Gly Asp Thr Thr Pro Thr Ile Val Asn Leu Asp His Pro Val Ile  
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Ser Cys Ala Lys Thr Lys Gln Leu Arg Val Val Asn Gly Ile Pro Thr  
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Arg Thr Asn Ile Gly Trp Met Val Ser Leu Arg Tyr Arg Asn Lys His  
500 505 510

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Gln Cys Phe Pro Ser Arg Asp Leu Lys Asp Tyr Glu Ala Trp Leu Gly  
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Ile His Asp Val His Gly Arg Gly Asp Glu Lys Cys Lys Gln Val Leu  
545 550 555 560  
5 Asn Val Ser Gln Leu Val Tyr Gly Pro Glu Gly Ser Asp Leu Val Leu  
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Met Lys Leu Ala Arg Pro Ala Val Leu Asp Asp Phe Val Ser Thr Ile  
580 585 590  
Asp Leu Pro Asn Tyr Gly Cys Thr Ile Pro Glu Lys Thr Ser Cys Ser  
10 595 600 605  
Val Tyr Gly Trp Gly Tyr Thr Gly Leu Ile Asn Tyr Asp Gly Leu Leu  
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Arg Val Ala His Leu Tyr Ile Met Gly Asn Glu Lys Cys Ser Gln His  
625 630 635 640  
15 His Arg Gly Lys Val Thr Leu Asn Glu Ser Glu Ile Cys Ala Gly Ala  
645 650 655  
Glu Lys Ile Gly Ser Gly Pro Cys Glu Gly Asp Tyr Gly Pro Leu  
660 665 670  
Val Cys Glu Gln His Lys Met Arg Met Val Leu Gly Val Ile Val Pro  
20 675 685 685  
Gly Arg Gly Cys Ala Ile Pro Asn Arg Pro Gly Ile Phe Val Arg Val  
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<210> 4

20 <211> 2172

<212> DNA

<213> Homo sapiens.

<400> 4

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&lt;210&gt; 5

&lt;211&gt;

&lt;212&gt; Artificial sequence

&lt;213&gt;

15

&lt;400&gt; 5

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28

&lt;210&gt; 6

20 &lt;211&gt;

&lt;212&gt; Artificial sequence

&lt;213&gt;

&lt;400&gt; 6

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29